

What is claimed is:

1. A high-brightness phosphor screen, comprising:
a luminescent material for emitting light of a predetermined color, used for color image display; and
a ZnO:Zn phosphor capable of enhancing the brightness of the display, wherein the mixing ratio of the luminescent material to the ZnO:Zn phosphor is varied according to a desired level of brightness.

2. The high-brightness phosphor screen of claim 1, wherein the luminescent material is a blue or green light-emitting phosphor.

3. The high-brightness phosphor screen of claim 2, wherein the blue light-emitting phosphor is at least one sulfide based phosphor selected from the group consisting of ZnS:Ag,Cl, ZnS:Ag,Cl,Al, (Zn,Cd)S:Ag, ZnS:Ag,Cl,Al,Mg, (Zn,Cd)S:Ag,Cl, (Zn,Cd)S:Ag,Cl,Al, and (Zn,Cd)S:Ag,Cl,Mg.

4. The high-brightness phosphor screen of claim 2, wherein the green light-emitting phosphor is at least one sulfide based phosphor selected from the group consisting of ZnS:Cu,Al, ZnS:Cu, ZnS:Cu,Al,Au, (Zn,Cd)S:Cu,Al, (Zn,Cd)S:Cu and (Zn,Cd)S:Cu,Al,Au.

5. The high-brightness phosphor screen of claim 1, wherein the amount of the ZnO:Zn phosphor added is 20% or less by weight based on the weight of the luminescent material.

6. A method for forming a high-brightness phosphor screen by mixing a luminescent material for emitting light of a predetermined color and a predetermined amount of a ZnO:Zn phosphor, the method comprising the steps of:

(a) preparing a phosphor mixture solution by dispersing the luminescent material and the ZnO:Zn phosphor in a solvent;

(b) forming a phosphor layer by depositing the phosphor mixture solvent on a substrate; and

8 (d) evaporating the solvent from the deposited phosphor layer.

1 7. The method of claim 6, wherein, in step (a), the luminescent material is
2 a blue or green light-emitting phosphor.

1 8. The method of claim 7, wherein the blue light-emitting phosphor is at
2 least one sulfide based phosphor selected from the group consisting of ZnS:Ag,Cl,
3 ZnS:Ag,Cl,Al, (Zn,Cd)S:Ag, ZnS:Ag,Cl,Al,Mg, (Zn,Cd)S:Ag,Cl, (Zn,Cd)S:Ag,Cl,Al,
4 and (Zn,Cd)S:Ag,Cl,Mg.

1 9. The method of claim 7, wherein the green light-emitting phosphor is at
2 least one sulfide based phosphor selected from the group consisting of ZnS:Cu,Al,
3 ZnS:Cu, ZnS:Cu,Al,Au, (Zn,Cd)S:Cu,Al, (Zn,Cd)S:Cu and (Zn,Cd)S:Cu,Al,Au.

1 10. The method of claim 6, wherein the amount of the ZnO:Zn phosphor
2 added is 20% or less by weight based on the weight of the luminescent material.

1 11. The method of claim 6, wherein, in step (b), the phosphor layer is
2 formed by depositing the phosphor mixture solution on the substrate with the
3 application of electrophoresis, screening, photolithography or precipitation.